

Inspectors, Testers, Sorters, Samplers, and Weighers

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What They Do

Quality is the goal of workers known as Inspectors, Testers, Sorters, Samplers, and Weighers. Manufacturing employs 70 percent of these workers in all phases of production. They may inspect raw materials used to manufacture products. They test products at each step of the production process. They ensure products that leave the plant meet standards.

The duties of Inspectors, Testers, Sorters, Samplers, and Weighers vary by industry, product, and stage of production. Some Inspectors use test equipment to verify correct product size or weight. Other Inspectors use their senses—sight, sound, touch, and smell. They identify defects such as scratches, color hue, and incomplete products. In the food processing industry, workers may even test by tasting.

Materials Inspectors examine and inspect materials and finished parts and products for defects and wear and to ensure conformance with work orders, diagrams, blueprints, and template specifications. They usually specialize in a single phase of inspection.

Mechanical Inspectors inspect and test mechanical assemblies and systems, such as motors, vehicles, and transportation equipment for defects and wear to ensure compliance with specifications. They operate finished products for testing. When needed, they complete procedures to satisfy licensing requirements.

Precision Devices Inspectors and Testers verify accuracy of and adjust precision devices, such as meters and gauges, testing instruments, and clock and watch mechanisms, to ensure operation of device is in accordance with design specifications. They read dials and meters to verify equipment is functioning according to specifications. When needed, they complete procedures to satisfy licensing requirements.

Electrical and Electronic Inspectors and Testers inspect and test electrical and electronic systems, such as radar navigational equipment, computer memory units, and television and radio transmitters, using precision measuring instruments. They read dials and meters to verify equipment is functioning according to specifications. They write and install computer programs to control test equipment.

Production Inspectors, Testers, Graders, Sorters, Samplers, and Weighers inspect, test, grade, sample or weigh nonagricultural raw materials or processed, machined, fabricated, or assembled parts or products. Work may be performed before, during, or after processing. They mark product or container to identify defects, grade, or size. They compare color, shape, texture, or grade of product or material with color chart, template, or sample to verify compliance with standards, using test equipment, such as thermometer, voltmeter, moisture meter, or tensiometer.

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Tasks

- ▶ Read and interpret materials, such as work orders, inspection manuals, and blueprints, to determine inspection and test procedures.
- ▶ Collect or select samples for testing.
- ▶ Analyze and interpret blueprints, sample data, and other materials to determine inspection and testing procedures.
- ▶ Inspect materials, products, and work in progress for conformance to specifications, and adjust process or assembly equipment as needed.
- ▶ Operate or tend machinery and equipment and use hand tools.
- ▶ Test and measure finished products, components, or assemblies for operation and accuracy.
- ▶ Mark items for acceptance or rejection and record test results and inspection data.
- ▶ Confer with vendors and others regarding inspection results, recommend corrective procedures, and compile reports of results, recommendations, and needed repairs.
- ▶ Clean and maintain test equipment and instruments.

Detailed descriptions of this occupation may be found in the Occupational Information Network (O*NET) at online.onetcenter.org.

Important Skills, Knowledge, and Abilities

- ▶ Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.
- ▶ Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.
- ▶ Operation and Control — Controlling operations of equipment or systems.
- ▶ Science — Using scientific rules and methods to solve problems.
- ▶ Production and Processing — Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.
- ▶ Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.
- ▶ Mechanical — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- ▶ Problem Sensitivity — The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- ▶ Near Vision — The ability to see details at close range (within a few feet of the observer).
- ▶ Visual Color Discrimination — The ability to match or detect differences between colors, including shades of color and brightness.
- ▶ Written Comprehension — The ability to read and understand information and ideas presented in writing.
- ▶ Perceptual Speed — The ability to quickly and accurately compare similarities and differences among sets of letters, numbers, objects, pictures, or patterns. The things to be compared may be presented at the same time or one after the other. This ability also includes comparing a presented object with a remembered object.

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- **Information Ordering** — The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).

Work Environment

Working conditions for Inspectors, Testers, Sorters, Samplers, and Weighers differ depending on industry and size of firm. Most will work indoors in air conditioned factories. Some will be on their feet most of the day at a workstation. Others will perform their work sitting. Heavy lifting may be involved depending on the part or product being inspected. Some plants will be noisy and gritty. Other plants must be clean and dust-free for manufacture of sensitive parts. Many manufacturing plants operate 24/7 and workers can expect to work evenings, nights, or weekends as well as overtime when needed. As workers obtain seniority, they have more choice about shift assignments.

California's Job Outlook and Wages

The California outlook and wage below represent the occupation across all industries.

Standard Occupational Classification	Estimated Number of Workers 2004	Estimated Number of Workers 2014	Average Annual Openings	2006 Wage Range (per hour)
Inspectors, Testers, Sorters, Samplers, and Weighers				
51-9061	53,300	56,600	1,540	\$9.86 to \$19.72

Wages do not reflect self-employment.

Average annual openings include new jobs plus net replacements.

Source: www.labormarketinfo.edd.ca.gov, Employment Projections by Occupation and OES Employment & Wages by Occupation, Labor Market Information Division, Employment Development Department.

Trends

The Inspectors, Testers, Sorters, Samplers, and Weighers occupation will grow slower than average for all occupations in California. The increased emphasis on quality has shifted quality from being the sole role of Inspectors, Testers, Sorters, Samplers, and Weighers to the job of all workers. This shift, as well as more automated inspection equipment, will affect the need to add new Inspectors, Testers, Sorters, Samplers, and Weighers.

Training/Requirements/Apprenticeships

Requirements vary greatly depending on the responsibility and industry. A high school diploma and short-term on-the-job training may suffice for jobs of sorting and simple pass/fail testing. More complex testing and inspection jobs go to experienced production workers who receive in-house training.

Recommended High School Course Work

High school students interested in this type of work should take courses in mathematics, algebra, computers, mechanics, and communication skills.

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Where Do I Find the Job?

Direct application to employers remains one of the most effective job search methods. For top industries that employ Inspectors, Testers, Sorters, Samplers, and Weighers and a list of major employers in your area, go to: www.labormarketinfo.edd.ca.gov or search the **yellow pages** under the headings for Employment Service-Temporary and Employee Leasing Services.

Use the *Search for Employers by Industry* feature on the *Career Center* page at www.labormarketinfo.edd.ca.gov to locate employers in your area. Search under the following manufacturing industry names to get a list of private firms and their addresses:

- ▶ Aircraft
- ▶ Aircraft Engine and Engine Parts
- ▶ Bare Printed Circuit Board
- ▶ Electronic Coils, Transformer & Inductor
- ▶ Electronic Connector
- ▶ Employment Placement Agencies
- ▶ Guided Missiles and Space Vehicles
- ▶ Other Aircraft Parts and Equipment
- ▶ Other Electronic Component
- ▶ Professional Employer Organizations
- ▶ Semiconductor and Related Devices
- ▶ Temporary Help Services

Where Can the Job Lead?

The largest employment growth will be in the employment services industry as more manufacturers shift to lean manufacturing and turn to temporary help firms for Inspectors, Testers, Sorters, Samplers, and Weighers. Industries that expect to increase direct hiring of Inspectors, Testers, Sorters, Samplers, and Weighers include pharmaceutical and medicine manufacturing, warehousing and storage, apparel/piece goods merchant wholesalers, electric goods merchant wholesalers, and grocery product merchant wholesalers.

Opportunities for advancement depend on size of firm and industry. Higher pay may be the most common form of advancement. In larger firms, Inspectors, Testers, Sorters, Samplers, and Weighers may advance to supervisor or inspectors of more intricate products or transfer to jobs using similar skills and knowledge.

Other Sources of Information

American Society for Quality
www.asq.org

International Organization for Standardization
www.iso.ch